

# A study of a provincial ear, nose and throat service in a British city prior to the National Health Service: Nottingham and South Nottinghamshire (1886–1947)

Patrick J Bradley

Department of Otorhinolaryngology, Head and Neck Surgery, Nottingham University Hospitals Queen's Medical Centre Campus, Derby Road, Nottingham NG7 2UH, UK

## Review Article

Presented at: XIth Meeting of the International Society of the History of Otorhinolaryngology, Royal Victoria Eye and Ear Hospital, Dublin, 27–29 October 2018.

Publication has been supported by funds from The Head and Neck Foundation.

**Cite this article:** Bradley PJ. A study of a provincial ear, nose and throat service in a British city prior to the National Health Service: Nottingham and South Nottinghamshire (1886–1947). *J Laryngol Otol* 2021;**135**:S1–S12. <https://doi.org/10.1017/S0022215121000943>

### Keywords:

History; Nottingham; Otolaryngology

### Author for correspondence:

Patrick J Bradley,  
10 Chartwell Grove,  
Nottingham NG3 5RD,  
United Kingdom  
E-mail: [pjbradley@zoo.co.uk](mailto:pjbradley@zoo.co.uk)

## Abstract

**Background.** It was in twentieth-century Britain that the two distinct surgical disciplines, otology and laryngology, became united under the title oto-laryngology. Aural departments were established in general hospitals in the hands of specialists long before throat departments. The development and politics of the specialty occurred in London, while provincial services commenced in the early eighteenth century, with ophthalmologists, setting up a clinic or dispensary, progressing onto a hospital.

**Methods.** The following resources were used: the Nottinghamshire Archives; Manuscripts and Special Collections at the University of Nottingham Libraries and The Local Studies Library, Nottingham Central Library.

**Results.** The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose was established in 1886, staffed by part-time general practitioners. The Nottingham Children's Hospital appointed two qualified surgeons in the 1910s and subsequently the General Nottingham Hospital appointed them as honorary assistant surgeons. Both hospitals provided access to beds, not available to the Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose. Following The Education Act of 1907, Nottingham created a School Health Services. By the 1920s, Nottingham had four institutions providing clinical and surgical ENT services. The National Hospitals Survey conducted in 1945 recommended that the Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose be closed and amalgamated with The General Hospital Nottingham.

**Conclusion.** The General Hospital Nottingham was slow to create a service for the diagnosis and treatment of ENT diseases and disorders, but established a Departmental Service by 1927. The surgical staffing was common to all four of the ENT services from mid-1930.

## Introduction

The specialty of otorhinolaryngology was born in the second half of the nineteenth century with the amalgamation of physicians who had developed their specialist interest in one of these organs – the ear, the nose and the throat.<sup>1</sup> The Germanic-speaking nations became the centre of major developments in science and teaching of otology and laryngology in the early part of the nineteenth century and were the domain of future aspiring surgeons, with the growth of research laboratories in the universities and the organisations of teaching and research by the professor and lecturers.<sup>1</sup> Meanwhile in Britain, the practice of otology was undertaken by surgeons as a sort of side-line to their other work and partly by unqualified practitioners.<sup>2</sup> Mastoid exploration was revived in the mid-1850s and considered essential for the treatment of inflammation and abscess of the ear.<sup>3</sup> James Yearsley (1805–1869), founder of the Metropolitan Ear, Nose and Throat Hospital, London (1838–1977) (the first British ENT hospital) and Joseph Toynbee (1815–1866), of St Mary's Hospital, London (1851), are considered to be the 'fathers of British otology' who built future otology on a sound foundation of pathology and science.<sup>2,4,5</sup>

The development of laryngology and shortly afterwards rhinology had been hampered by the inability to view and examine the anatomy, and credit is given to Manuel Garcia (1805–1906) from Spain, who in 1854 perfected the use of the diagnostic laryngeal mirror.<sup>1</sup> It was Theodore Billroth (1829–1894), a general surgeon, who performed the first laryngectomy in Vienna in 1873. In Britain, head and neck tumour surgery was performed by the general surgeons, notable of these were Henry Butlin (1845–1912) of St Bartholomew's Hospital, London, considered to be the father of British head and neck surgery, if not the first head and neck surgeon, and William Trotter (1872–1939), University College Hospital, London.<sup>6–8</sup> An epidemic of diphtheria in Western Europe (1850–1890), and the development of laryngeal intubation rather than tracheostomy, became an obvious source of threat to general surgeons. These advancements resulted in the establishment of public and private institutions devoted to laryngology and the throat symptoms throughout Europe.<sup>2</sup> In Britain, it was Morell Mackenzie (1837–1892)

who pioneered laryngology and founded the Metropolitan Free Dispensary for Diseases of the Throat and Loss of Voice in 1863, the first of its kind in the World.<sup>1</sup> Felix Semon (1849–1921) joined Mackenzie at the Throat Hospital, Golden Square, London (1865–1981) and succeeded him as the leading British laryngologist.<sup>2</sup>

During the nineteenth century, there were more than 1100 hospitals founded in Britain, excluding the hundreds of cottage hospitals; of these there were 169 specialist hospitals or 15.3 per cent overall. During the decade 1870–1880, 166 hospitals were founded, 30 of these were specialist hospitals, of which 11 were for the treatment of the eye, ear and throat.<sup>9</sup> In 1804, ‘The London Dispensary for the Relief of the Poor Affected with Eye Disease’, more familiarly known as ‘Moorfields’, was founded by Dr Cunningham Saunders, who was an aural surgeon and an oculist, and is considered to be the first such hospital. ‘The Royal Ear Hospital’ (1816–1997) was founded by Dr Harrison Curtis, under the title ‘The Dispensary for Diseases of the Ear’ which was favoured by royal patronage throughout its career. Curtis published an article in the *Lancet* (1838) pinioning that a deficiency of cerumen was one of the commonest causes of deafness and claimed to cure this by painting the meatus with creosote.<sup>5</sup> Toynbee, Yearsley and colleagues, eminent British otologists, were avowed crusaders against quackery, unqualified and qualified, castigating them for bringing disgrace upon the profession.<sup>2,4,5</sup> In 1818, the ‘Shrewsbury Eye, Ear and Throat Hospital’, credited as being the earliest British provincial ear and throat establishment, was founded as an ‘eye dispensary’ and expanded to treat diseases of the ear (1862) and eventually diseases of the throat (1867), the name being changed to reflect each ‘new specialist service’, and the hospital was relocated.<sup>10</sup> More accurately, it was Henry Lilley Smith (1787–1859), founder and sole surgeon, who set up the first provincial ‘Eye and Ear Infirmary’ at Southam, Warwickshire in 1818, which closed in 1872.<sup>11,12</sup> The second, an aural institution, was ‘The Birmingham Institute for Relief of Deafness and Diseases of the Ear’, founded in 1844, which in 1870 amalgamated as the Birmingham Eye and Ear Hospital, a title which eventually changed to the Birmingham and Midlands Ear and Throat Hospital (1891).<sup>9,13</sup>

### Specialisation and its opponents

The Medical Act of 1858 established a single register for all medical practitioners in Britain, with recognised diplomas or degrees; there were, besides the so-called quacks, three separated categories of doctors declared: the physician, the surgeon and the apothecary. Each group had its own professional body; each of these bodies had its own national institution in England, Scotland and Ireland and each had a distinct professional history.<sup>14</sup> Surgery was an old and well-established trade long before the Colleges of Physicians (London 1518, Edinburgh 1681 and Ireland 1667) were established, but it only achieved the respectability of a profession when surgeons were organisationally separated from their fellow barbers in the eighteenth century by Royal Charters setting up the Colleges of Surgeons (Edinburgh 1778, Ireland 1784 and London (later England) in 1800). It was in 1843 that the Royal College of Surgeons (RCS) England established a special examination which conferred the status of fellowship (FRCS) on successful candidates. Previously, the RCS had a basic membership examination (MRCS) and it was possible to practise medicine and surgery by holding the MRCS alone. The

establishment of this higher qualification of competence and expertise was more desirable for the surgical consultant of repute, who desired a consultant post with his own hospital beds and his own retinue of students.<sup>15</sup>

During the eighteenth century, 154 voluntary hospitals, including Nottingham (1781), established in Britain as charitable institutions for the sick poor – and not for the middle class, required medical staffing.<sup>16</sup> Physicians and surgeons who were appointed were expected to give their services for free, but the teaching of medical students attracted a fee, and hence during the nineteenth century, medical schools in England, most located in London, developed around hospitals rather than universities – in marked contrast to the system in the Germanic-speaking countries, where medical education was a stem from university science departments.<sup>17</sup>

In London, there was an explosion of specialist hospitals in the second half of the nineteenth century and these were considered as unnecessary competition for resident tuition, private fees and charitable funding as well as provision of patients. Despite the opposition of the medical elite (teaching hospitals/city general hospitals) to specialisation, many opened specialist departments and appointed assistant physicians or surgeons to be in charge, often irrespective of their qualifications, thus achieving and keeping the specialties under their overall control.<sup>15,18,19</sup> Competition for admission to the honorary staff at this time meant years of anxious waiting, requiring favouritism from seniors and usually promotion only occurred through retirement or death.<sup>14</sup> The only alternative for the frustrated junior or aspiring specialist was to found his own hospital, which appears to have resulted in the establishment of many of the provincial eye and ear hospitals, infirmaries and dispensaries.<sup>20</sup>

The amalgamation of 15 ‘specialist medical and surgical’ societies, ‘all based’ around London, in 1907, signalled the acceptance of specialisation by the establishment after a prolonged period of resistance, and claimed that as a result of this association the threatened risk of disintegration of the profession had been averted. The founding Societies included were: the British Laryngological, Rhinological and Otological Association (1888), The Laryngological Society of London (1893) and The Otological Society of the United Kingdom (1899).<sup>21,22</sup> However, as a consequence of amalgamation into a single society, it was necessary to have two separate sections. The sections of otology and laryngology had to be created in spite of their proximity anatomically, and remain so to this day, because of ‘personality and professional differences’ held by members.<sup>21</sup>

### British ear and throat clinics (nineteenth century)

London, by the end of the nineteenth century, had five identifiable specialist hospitals diagnosing and treating diseases of the ENT: (three mentioned above) and The Royal National Throat, Nose and Ear Hospital (1874 to date)<sup>23</sup> and The London Throat Hospital (1887–1918).<sup>9</sup> In 1913, a questionnaire survey of clinics in Britain, providing care of patients with diseases of the throat, nose and ear identified 118 institutions: London had 42 general hospitals and specialist clinics, and in the provinces, 76 hospitals and clinics were identified. In the provinces, seven hospitals were identified as ear hospitals, or ear and throat hospitals with the remaining being eye and ear hospitals or infirmaries,<sup>24</sup> with additional information available on nineteenth-century provincial eye hospitals (Table 1).<sup>11</sup> During the same time, in London, a

**Table 1.** Provincial hospitals or dispensaries described as providing services for ear and throat, or combined eye and ear, or eye, ear and throat (1818–1913)<sup>11,24</sup>

Year established	Name of hospital (year of closure or name change)
1818	Southam Eye and Ear Infirmary (1872)
1822	Hull Dispensary for Curing Diseases of the Eye and Ear (1831 private Institution?)
1822	Leeds Eye and Ear Dispensary (1869 incorporated into the Leeds General Infirmary)
1831	York Eye and Ear Institute (1837)
1837	Bath Eye and Ear Dispensary (1916)
1839	Liverpool Ear Institute (1841 combined to become the Liverpool Eye and Ear Infirmary. 1932–1948 Liverpool Eye, Ear and Throat Infirmary)
1844	Birmingham Ear Infirmary (1871 amalgamated with the Birmingham Eye and Ear Hospital, name change in 1891 Birmingham and Midlands Ear, Nose and Throat Hospital)
1848	Davenport and Stonehouse General Dispensary and Institute of the Eye and Ear
1855	Manchester Ear Hospital (Manchester Institute for Diseases of the Ear, 1898–1910 Manchester Ear Institute)
1857	Bradford Eye and Ear Hospital (1948)
1861	Cheltenham Eye, Ear and Throat Hospital (1923)
1862	Shrewsbury Eye and Ear Dispensary (and Throat 1867)
1864	North Riding Eye and Ear Infirmary (2003)
1864	Blackburn Infirmary – Eye, Ear, Nose and Throat Department
1867	Hull Eye and Ear Dispensary (1877)
1872	St Paul's Eye and Ear Hospital, Liverpool (1901 burnt down and moved becoming St Paul's Eye Hospital)
1875	Manchester Hospital for Consumption and Throat Disease
1877	Newcastle-Upon-Tyne Throat, Nose and Ear Hospital
1878	Brighton Throat and Ear Dispensary (1890 changed to Brighton Throat and Ear Hospital)
1878	Tunbridge Wells Eye, Ear and Nose Hospital (1935)
1879	Birkenhead Eye and Ear Dispensary (1892)
1883	Hereford Eye and Ear Hospital (1889 Victoria Eye and Ear, 1923)
1883	Scarborough Eye and Ear Infirmary (1897)
1884	Portsmouth and Southern Counties Eye and Ear Hospital (1941)
1885	Chester Eye and Ear Infirmary
1886	The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose (1947)
1886	Halifax Eye, Ear and Throat Hospital (1914)
1886	Plymouth: Devon and Cornwall Eye and Throat Hospital (1930, absorbed into South Devon and East Cornwall Hospital).
1888	Manchester Eye and Ear Hospital (1909 renamed as St John's Hospital of Manchester and Salford for Eye and Ear in 1909, Eye discontinued 1913, 1949)
1890	Leicester Royal Infirmary
1894	Addenbrooks, Cambridge
1906	Bristol Royal Infirmary
1897	Sheffield Royal Hospital
1899	Southampton Hospital
1900	Reading Hospital
1905	Derby Royal Infirmary
1906	Radcliffe Infirmary, Oxford

number of teaching hospitals appointed an honorary aural surgeon and established an ear department followed, in some instances, by years, if not a decade or two, before appointing a colleague, an honorary throat surgeon to open and run a separate throat department. Again after some additional time, both departments were combined.<sup>9</sup> Such an appointment system appeared to have ceased or diminished after 1879, around which time the provincial general hospitals

had commenced to establish in-house services for patients with ENT disorders.<sup>9</sup>

#### *Care of the Nottingham sick poor*

The needs of the sick poor were provided locally by the Nottingham General Hospital (established in 1782)<sup>25</sup> and later by the Nottingham Dispensary (established in 1831).<sup>26</sup>

The Nottingham General Hospital provided in-patient care for short-term acute cases, refusing to treat long-term chronic cases and those with infectious diseases. The Nottingham Dispensary had no beds and only provided a clinical service to those who attended on a day basis. Having once attended the Dispensary, care could be provided as a home visit for the terminally ill and chronically sick. During this period, the Nottingham voluntary hospitals and dispensaries, except for accidents and emergencies, operated a patient recommendation system for attendance or admission. In Nottingham, specialist dispensary or hospital services had been founded for eyes (in 1859),<sup>27</sup> children (in 1869)<sup>28</sup> and women (in 1875).<sup>29</sup>

### *The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose*

The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose (NNHDTEN) was established in 1886 by Dr Donald Stewart, a graduate of Glasgow Medical School, MB 1874, LRCS Edinburgh 1874 and MD Glasgow 1876.<sup>30</sup> Dr Stewart had worked as a medical assistant for several general practitioners during his vacation from medical school, returning after graduation into a general practice partnership. He was a house surgeon in Blackburn Ear, Nose and Throat Department at Blackburn and East Lancashire Infirmary in 1874. He subsequently travelled as an ENT fellow to Edinburgh and Vienna before returning to Nottingham. He befriended many general practitioners – many of whom were or became presidents of the Nottingham Medico Chirurgical Society – an educational and social society between general practitioners and Nottingham Hospital medical staff. One such was Dr Walter Hunter (1849–1941), a medical school classmate, who became Medical Officer of Health in West Bridgford for 46 years.<sup>31</sup> It, therefore, can be assumed that Dr Stewart was aware of the ENT needs of the population of Nottingham and Nottinghamshire?

Dr Stewart, November 1886, sought an endorsement of support for the establishment of a hospital from the town's elders and leaders of public bodies at a meeting, which included the lord mayor, town clerk, several church leaders and numerous medical men.<sup>32</sup> Dr Stewart worked alone from a single room on Peachy Terrace (his practice premises) initially once a week, then twice a week, from 1887 until 1891. He saw 515 new patients during the first 13 months, increasing to 773 by 1891.<sup>33</sup> The annual attendances also increased from 2557 in the first 13 months to 4230 in 1891. A second surgeon was appointed to assist Dr Stewart, Dr Herrick, a graduate of Trinity College Dublin (aged 25 years), as well as a dental practitioner, James Johnston (an innovation for such a clinical practice).<sup>34</sup> Sadly, the dentist died following a traffic accident in 1915. Dr Stewart informed the Board of Governors in 1891 that the work done was lessened by the want of one or two beds.<sup>35</sup> Dr Stewart tendered his resignation in 1895 because of ill health,<sup>36</sup> moved from Nottingham and died in 1914. Dr Power Grey, FRCS, replaced Dr Stewart, and reflecting the activity during 1899, the clinic was open 153 days, with 1237 new patients seen, with a total attendance of 4700 (each patient was seen on average 3.8 times, with a daily attendance of more than 30 per day).<sup>37</sup>

It was not until 1902 that alternative premises, Shakespeare Street (edge of the town), were leased, in addition to the clinical base in Upper Parliament Street (town centre) which allowed for in-patient treatments using eight beds.<sup>38</sup> With time, a second property was leased next door to the

Shakespeare Street property allowing for the out-patients to be held alongside the in-patient facilities. During the years 1905–1928, in-patient surgical treatment commenced and rose from 250 to more than 350 patients per year, with many additional patients having surgery under local anaesthetic.<sup>39</sup> Finally in 1925, a property was purchased on Goldsmith Street. This was to be used for in-patients, and it was necessary for a new build to house the out-patients. This building was opened in 1928 with five extra beds (11 in total) allowing for 718 patients to have in-patient surgery.<sup>40</sup> In 1929, the Governors introduced a number of 'beds' for paying patients, to supplement the failing income.<sup>41</sup> During the 1930s, much additional building was undertaken to expand, and refurbish the original building to allow for additional clinical work to be undertaken both in-patient and out-patient, as well as to provide nurse accommodation and expand the kitchen facilities (Figure 1). The patient clinical activity during the subsequent years was not consistently reported but peak numbers showed that 2095 new patients were seen in 1929, 774 operations were performed in 1930 and 8420 patients attended in 1935.<sup>42</sup>

During the 1930s, two of the surgical staff died, Grey and Wesley, and were replaced by the three appointments of Dr HB Liebermann, Dr EJ Gilroy Glass and Dr RA Marshall, all of whom worked at the Ear, Nose and Throat Department of Nottingham General Hospital.<sup>42</sup> In 1939, the Nottingham Saturday Committee approved that henceforth the NNHDTEN would benefit from its funds, of which previously the General Hospital had been the major recipient for decades.<sup>43</sup> The amount donated in 1940 to the hospital was in excess of £820 in the first year, which was almost 50 per cent of the annual income.<sup>44</sup> It was Thomas Howitt, a governor (since 1926) and ultimately president of the board of managers of the NNHDTEN (1938–1947), who designed and implemented all of the construction and extensions required.<sup>45</sup> Thomas Cecil Howitt was the chief architect of Nottingham City Council who is remembered for designing many prominent public buildings – most notably the Nottingham Council House in Market Square.<sup>46</sup> Howitt had developed early plans in 1944, for building an extension to cope with the increasing volume of work,<sup>47</sup> but by 1946 there were plans afoot to move and build a 'new hospital'.<sup>48</sup> However, it was during 1944, the White Paper *A National Health Service* was published which detailed the government's vision of a comprehensive, free and unified healthcare.<sup>49</sup> At the 60th Annual General Meeting in February 1947, it was reported that it was 'impossible to get permission to build a new hospital', and Howitt made an appeal that small hospitals should retain their individuality.<sup>50</sup>

### *The General Hospital Nottingham*

The General Hospital Nottingham (GHN) opened in 1782, located in the town centre with 40 beds, expanding over time and eventually accommodating 235 patients in beds by 1913.<sup>25</sup> The rules governing the practice of consultant staff at GHN differed between physicians and surgeons over time. In 1818, the election of honorary staff was by a vote of all of the governors. In 1829, the Hospital Board passed a rule that physicians practise pure medicine; 'physicians shall not practice surgery, pharmacy, or midwifery or be in partnership with such'. Surgeons at that time had no similar rules, and most held positions in general practice. No general practitioner was elected after 1888 and subsequently, the *election of the*



**Fig. 1.** The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose (Architect's Drawing). The ground floor was built and opened in 1928, with increasing clinical demands the out-patients department was extended by building a first floor extension opened in 1935. The local area was demolished in the 1970s to accommodate Nottingham Trent University. (Source acknowledges Local Studies Library, Nottingham Central Library.)



**Fig. 2.** The Ropewalk Wing where the Department of Ear, Nose and Throat, The General Hospital Nottingham was located from 1927. (Source acknowledges Paul Swift.)

*honorary staff* was made by a special committee appointed for the purpose. Short-listed candidates were interviewed by a panel and votes taken, the winner with the most votes was duly elected to appointment.<sup>25</sup>

By 1899, there were five resident staff: a house physician and an assistant house physician, a house surgeon and two assistant house surgeons; there were three honorary physicians, and there were four honorary surgeons.<sup>25</sup> Reviewing the clinical activity recorded in the Annual Board Meeting Report of the GHN; in 1906, there were 13 731 out-patients, 3157 in-patients and 2350 operations. The surgical procedures listed as being performed during that period included tonsillectomy and adenoidectomy (T's and A's), nasal polyps, mastoid abscess, etc. Mastoid abscess surgery was recorded, although uncommon and was associated with a mortality of  $\geq 20$  per cent.<sup>51</sup>

### Appointment of ENT

In 1911, Alex R Tweedie<sup>31,52,53</sup> and in 1914 Herbert Bell Tawse<sup>31,52,54</sup> were appointed Honorary Assistant Surgeon, both possessed FRCS London and had trained in ENT in London for several years. Tweedie was absent on military duty during the period 1914–1917 when Tawse worked alone. There is no recorded reason for the decision to appoint ENT specialists to NGH. Although it was recorded in the minutes of the NGH board meeting of 1921, 'that the allocation of 12 beds in the Isolation Block for Ear, Nose and Throat cases, no provision for such a Department has been made and that the present temporary arrangements are quite inadequate to deal with the needs of the patients'.<sup>55</sup> The Isolation Block was a temporary building, constructed on the front lawn of the hospital in 1894, that had housed and cared for the injured military who had returned from the war.<sup>25</sup>

During 1920, both Tweedie and Bell Tawse were appointed to honorary aural surgeon status and it was agreed to establish a Department of Ear, Nose and Throat at GHN.<sup>52</sup> To resolve the problem of inadequate ENT accommodation, as well as other hospital needs, plans were put into progress for a new build – the Ropewalk Wing (Figure 2). By 1927, the wing was completed and opened by Her Royal Highness Princess Mary and Countess of Harewood (1897–1965) with the Duke of Portland (1873–1943), who was President of the

Building Committee. William Goodacre Player (1866–1959), of Players Cigarettes, contributed £50 000 to the Building Fund. The 'new' ENT department was now housed entirely on the first floor with 40 beds, which included a children's ward. There was a 'well-equipped' operating theatre, sister's room, etc., and a complete out-patients department.<sup>25</sup> In 1928, the women's ENT ward was named 'The Princess Mary Ward'; in 1936, the male ENT ward was named 'The Tweedie Ward' and in 1941, the children's ENT ward was named 'The Tawse Ward'.<sup>55–57</sup>

In 1935, EJ Gilroy Glass and HB Liebermann were appointed honorary assistant aural surgeons.<sup>56</sup> AR Tweedie died suddenly in 1935, followed shortly by the death of Bell Tawse in 1940. Glass was appointed honorary aural surgeon in 1946.<sup>57</sup> AR Marshall was appointed honorary assistant aural surgeon and IAM Macleod in 1947.<sup>57</sup> During 1944, there is a record of a request to appoint a surgical registrar to the Aural Department, which required approval by the Central Medical War Committee, as the work of the Hospital was Class A under the emergency Medical Scheme for the treatment of ENT cases. E Kaplan who had been on the resident medical staff for three years was appointed and remained in service until the 1960s.<sup>57</sup>

### Patient activity

The clinical activities conducted by the two ENT surgeons were not recorded until 1925, and then only the out- and in-patient activities. The spectrum of ENT surgical procedures recorded following their appointment, until 1915, showed gradual increasing numbers of operations such as nasal polyps, septal surgery, T's and A's, tracheostomy and laryngectomy. Increasing numbers of patients were treated for mastoiditis, with a reduction of their mortality rate.<sup>52</sup> The data of the first year of ENT for year 1925 were 1595 new patients with 9770 attendances.<sup>55</sup> The operations performed were not sub-classified into major or minor, but surgical procedures performed exceeded 800 per year by the mid-1920s. In 1947, it was recorded that 3676 new patients had been seen and 13 217 patient attendances.<sup>57</sup>

In 1933, a campaign was launched to build a 'pay bed block' to allow for patients who could or desired to pay according to their capacity for their treatment. Most of the contributions,

overall, were made by RG Player, RA Shipstone (Brewery) and several local societies and it was opened in 1938 with 43 beds with an operating theatre.<sup>58,59</sup> The average daily occupancy was reported in 1941 to be 93 per cent (38/43), and urgent need for further accommodation, which was completed by 1945, increased the beds to 46.<sup>25</sup>

## Nottingham Children's Hospital

### The founding

The General Hospital had become concerned (1850s) with the numbers of sick children living locally in squalid housing and poor sanitary conditions, and the General Hospital committee felt that they were unable to provide appropriate care and accommodation for their needs. A suitable building was purchased for £1500. Alterations were made and paid for by Sir Charles Seeley (1833–1915), Chairman of the Monthly Board of the General Hospital. The Nottingham Children's opened in 1859. Over the next 10 years, the hospital provided a necessary service but with the constraints of lack of space, money and quibbling over where the money came from and the necessity to build a hospital in the midst of a popular neighbourhood (town centre and adjoining GHN).<sup>28</sup>

### The buildings and finances

In 1898, (Sir) Thomas Birkin (1831–1922), a Nottingham lace manufacturer, donated his home, Forest House, in Mapperley (North of the City Centre) for immediate use.<sup>60,61</sup> The cost of converting the house into suitable premises for hospital usage amounted to £8000 (Figure 3). Two main wards were officially opened in 1900 by the Duchess of Portland (Winifred Cavendish-Bentinck) (1863–1954).<sup>28</sup> In 1916, a new operating theatre and X-ray room were installed.<sup>62</sup> During the war years, there were 'trying times' with air-raids and bombing, evacuation of children, shortage of nursing staff and even the threat that the medical ward would have to close. On the death of Birkin, who had stipulated that the house would not be altered in his life-time, John Dane Player (1865–1950), eldest son of John Player of tobacco fame and brother of William Woodacre Player, offered to pay for and equip a new wing and donated some £40 000 (or even more!).<sup>63</sup> This increased the number of beds to 80 in total – twice the original. This new wing was opened in 1927 by Princess Mary (Mary, Princess Royal and Countess of Harewood).

### The surgeons

In 1908, Tweedie was appointed Honorary Assistant Surgeon to the Children's Hospital,<sup>53</sup> and in 1909, Bell Tawse was also appointed, becoming senior surgeon in 1935.<sup>54</sup> Marshall replaced Bell Tawse on his death and was appointed as temporary honorary assistant surgeon<sup>64</sup> and was promoted to honorary senior ENT surgeon in 1946.<sup>65</sup> IA Macleod who had trained in Nottingham was appointed honorary assistant ENT surgeon in 1947.

### The patients

The information about the ENT patient activity is sparse – but it was commented that 'on Monday afternoons 20 patients were admitted to the Bell Tawse Ward to have their tonsils and adenoids removed. There were discharged on Thursday



**Fig. 3.** Nottingham Children's Hospital. Forest House, the home of Mr Thomas Birkin, was donated and opened in 1900 as the Nottingham Children's Hospital. (Source acknowledges Mr Paul Swift.)

mornings, while on Thursday afternoon another 20 arrived and the same pattern was repeated'.<sup>28</sup> When the Children's Hospital closed in 1978, ENT had 18 beds. The volume of the out-patient clinic was managed by a single clinician during the 1940s period, data for the earlier period have not been found<sup>64,66</sup> (Table 2).

Between 1918 and 1926, all of the children listed for T's and A's at the School Clinic underwent their surgery at the Children's Hospital under the care of Bell Tawse (Figure 3). Some of the children's families could afford to pay and their children were treated privately.

## Central School Health Clinic: Nottingham Education Committee

Much improvement was achieved for children's health and medical care by the 1907 Education (Administrative Provisions) Act, which set out a number of systems for schools. Local authorities had to set up medical inspection units to incorporate the many systems that related to the health of children. Over the course of their schooling years, each child would be given a medical examination, on no less than three occasions. The duration of compulsory attendance at school had increased over a 20-year period and had been raised to 12 years of age by 1899. Many of these children were recommended for T's and A's as well as the identification of children who were deaf. Compulsory education had been extended to blind and deaf children under the Elementary Education (Blind and Deaf Children) Act of 1893, which established special schools.<sup>67</sup> In 1883, the Nottingham School for Deaf Children had been founded by CH Green at Holly Mount, Clarendon Street.<sup>68</sup>

The Nottingham City Council responded to the Education Act by establishing a School Health Service in 1908, initially opening several small clinics, such as the Eastcroft Clinic in the early years. By 1911, the service was moved to the Clarendon Street Clinic, directed by the Nottingham Board of Education, with an ENT clinic held once a week. With time, these facilities were deemed wholly unsuitable and inadequate, as recorded by Tawse, resulting in the closure of the clinic in 1926.<sup>69</sup>

In 1920, Nottingham City Council purchased 28 Chaucer Street, which had previously been the Nottingham House of Refuge, founded in 1837.<sup>70,71</sup> The building had been built in

**Table 2.** Annual general and ENT out-patient activity and main hospital and ENT surgery performed between 1941 and 1945<sup>64,66</sup>

Annual medical reports of Nottingham Children's Hospital 1941–1945 <sup>64,66</sup>				
Year	Total OPD	ENT OPD	Surgery main hospital	Surgery ENT T's and A's
1941			1884	1193
1942	46234	1272	1702	1845
1943			2126	1307
1944	60112	2029	2095	1237

1854 as The Female House of Refuge. The building required major modernisation and alteration to make it suitable for usage as a clinical area for examination and treatment of children. The Clinic opened in 1926 (Figure 4). The Chaucer Street or School Clinic was equipped to examine and treat children and commenced performing T's and A's as day-cases in 1926, these patients previously would have had their surgery at the Children's Hospital.<sup>72</sup>

### The surgeons

Some of the early Annual Reports of the Medical Officer of School Health Services Nottingham are missing between the 1910 and 1918 periods. In 1912, Dr JP Gray, from the NNHDTEN, was examining children and remarked that he 'estimated that 15 per cent of school children suffered from nasal obstruction (adenoids)'. He referred some three children to the deaf school. Dr Gray's appointment was described as 'Examiner of deaf-mute children' in 1918. Bell Tawse, consultant at the Children's Hospital, joined the ENT clinic as the consultant aural surgeon in 1918. It was recorded that Tawse had arranged 'by the kindness of the Governors of the Children's Hospital that children could be treated in their institution'. Many of the children seen who were listed for T's and A's, and were found to have dental caries, underwent dental extractions by a Mr, Carrington, the resident dental surgeon usually the day before tonsillectomy.<sup>69</sup>

On occasions, Dr RG Sprenger, who had worked at The General Hospital, was appointed as assistant schools medical officer in 1926, with attachment to the ENT Clinic. He, on occasions, undertook some of the T's and A's surgical lists. Dr Sprenger ultimately was appointed principal school medical officer in 1954.<sup>69</sup> Dr Gray died in 1937 and was not replaced. When Bell Tawse died in 1940, he was replaced by AR Marshall who had been appointed honorary assistant surgeon at the Children's Hospital<sup>65</sup> and honorary ENT surgeon in 1946.

### The patients

Table 3 illustrates that there were large numbers referred by the school medical officers, with a fewer number examined. The numbers of children deemed requiring surgery ranged from 34.4 to 70.0 per cent and of those proceeding to T's and A's range from 50.5 per cent in the early years to  $\geq 85.0$  per cent and in the latter years  $>75$  per cent of children underwent surgery.<sup>64,65</sup>

The ENT clinics and surgery continued at Chaucer Street Clinic, commencing in 1926 and continued beyond 1947. There were increasing numbers of children referred that

**Fig. 4.** The Nottingham Central School Health Clinic on Chaucer Street was opened in 1926. (Source acknowledges Inspire Nottingham Archives CA/ED/1/5/62.)

required examination by the ENT specialist (Table 3) resulting in the numbers of children undergoing surgery per year ranging from 650 to 900. The Chaucer Street Clinic had two wards with 13 beds and resident nursing staff in attendance and a single operating theatre shared with the dental service. By 1929, it was declared that major ear surgery was impossible to provide during surgical lists at Chaucer Street and would be treated at the GHN department. It was also in 1929 that the facilities being offered to elementary school children were made available for secondary school pupils, so long as the parents were prepared to contribute towards the cost of each treatment.<sup>73</sup> Ear surgery, when a need was identified, could be undertaken at the General Hospital where there were children's beds. Children with discharging ears were treated for a short period of time by 'zinc ionisation' which had been advocated in 1920; however, there are no data on the effectiveness of the treatment.<sup>74</sup> It was not until the 1944 Educational Act that pure-tone audiometry was introduced widely to test hearing, although it was introduced at the School Clinic in 1929.<sup>73</sup> Sixty-six children underwent surgery at Nottingham City Hospital in 1946, performed by Glass. In 1947, during the second half of the year, the risk from a polio epidemic resulted in the cancellation of all surgery.<sup>75</sup>

### Other hospitals and services

*Nottingham City Hospital:* The council bought an area of land in Bagthorpe in 1885 to build an isolation hospital and sanatorium which opened in 1891 named Bagthorpe Infirmary, renamed the City Infirmary in 1930, and the City Hospital in 1937.<sup>75</sup> The first departments established were medicine and surgery, appointing consultants in 1929, and over time added the speciality of thoracic medicine and surgery. By 1929, there was a single operating theatre with a surgeon visiting one day a week from NGH; all other surgery was carried out by the medical officers. The 'children's theatre' was built in 1930 and a new twin theatre block came into use in 1954. Glass was appointed as honorary assistant ENT surgeon to NCH in 1929. Glass was absent from 1937 to 1946 and on his return resumed his previous position.<sup>31</sup>

*Mansfield General Hospital:* Some 15 miles North of Nottingham, opened in 1890 and previously had been the Mansfield Infirmary 1882. Mansfield General Hospital was one of the two hospitals, Victoria Hospital the other, which had two wards each with five beds and dealt with acute medical, surgical, orthopaedic and accident cases. Glass was

**Table 3.** Annual numbers of children referred by Medical Officer of Schools Health, Services Nottingham examined, surgery recommended, surgery performed and reasons for not receiving surgery<sup>70</sup>

Year	Cases referred	Examined	Surgery recommended	Surgery performed	Other comments
Nottingham Children's Hospital (Annual Surgical Activity Report)					
1918	447	319	206 (64.6%)	104 (50.5%)	48 Refused 24 DNA
1919	919	919	316 (34.4%)	199 (64.0%)	23 Refused 104 DNA
1920	1413	1078	650 (60.2%)	383 (59.0%)	NR
1921	1763	1132	637 (56.3%)	529 (82.4%)	NR
1922	1986	1021	623 (61.0%)	486 (78.0%)	NR
1923	1737	1029	645 (62.6%)	548 (85.0%)	NR
1924	1557	1101	497 (45.1%)	418 (84.1%)	NR
1925	1804	858	601 (70.0%)	511 (85.0%)	18 Refused 32 DNA
1926	1617	1014	645 (63.6%)	350 (74.3%)	22 Refused 61 DNA
Chaucer Street Clinic opened 8 November 1926 (Annual Activity Report)					
1926				129	
1927	2508	2344	1190 (50.8%)	897 (75.4%)	40 Refused 77 DNA
1928	4142	2650	1365 (51.5%)	1318 (96.6%)	61 Refused 58 DNA
1929	3922	2422	1200 (49.9%)	959 (80.0%)	36 Refused 153 DNA

DNA = patient did not attend; Refused = parents refused to proceed to surgery; NR = not recorded

appointed as honorary assistant ENT surgeon in 1929<sup>31</sup> and when absent on military duty, the service was provided by Dr Kaplan with senior cover from NGH.<sup>76</sup> In 1942, Marshall was appointed assistant ENT surgeon promoted to consultant surgeon in 1947.<sup>77,78</sup>

### Introduction of the National Health Service

The story of clinical and organisational developments of the National Health Service (NHS) can best be understood within the wider context of the development of the welfare state.<sup>79</sup> The voluntary hospitals had no monopoly on care, the public or municipal sector also provided hospitals, both the local government (asylums) and the Poor Law (Isolation and long-term sick and 'old age'). By the 1890s, the voluntary hospitals contained about 26 per cent of beds, rising to 33 per cent in 1938, with 20 per cent in the Poor Law workhouses and 47 per cent in local government.<sup>16</sup> However, it was in the voluntary hospitals that acute medical care was practised. Pressure for reform of the British Health Services built up throughout the 1930s and early 1940s, as the ideal of a comprehensive, universal system gained support.<sup>80</sup> The Voluntary Hospitals, traditionally funded through donations of the living and the legacies of the dead, became less obviously philanthropic institutions by the early nineteenth century. There was a new income after 1870, reflected in enlargement of hospital clientele of middle-class employed donors via Hospital Sunday and Saturday public collections, the emergence of quasi-insurance workplace (National Insurance Act 1911) or community contributions which offset treatment costs, and the introduction of direct charges on patients in some hospitals. These forms of payments had become the principal source of voluntary hospital income by the 1930s<sup>16,79-81</sup> and became more acute between the War

years.<sup>82</sup> Prior to 1939, health services in England comprised a patchwork quilt of services in the public, private and charitable sectors. It was during the 1930s and through the War years, that the British Medical Association (BMA) in 1938 proposed a 'General Medical Services for the Nation', which was matured by 'The Beveridge Report' 1942 and ultimately The White Paper 'A National Health Service' in 1944.<sup>83</sup>

### National survey of English hospitals

There was a national survey of hospitals in 1938 to consider the provision for casualties in the event of war, and research has concluded that the distribution of hospital facilities was chaotic and haphazard, rather than being determined by simple dichotomies such as north/south and urban/rural – the chances of getting good medical care was a lottery!<sup>84</sup> A second hospital survey was mounted during 1942/1944, to provide a firm basis for planning the NHS. England was divided into 10 regions, with 2 or later 3 surveyors to visit each institution that 'might call itself a hospital'. Sheffield and East Midlands was one of the first to be surveyed and the detailed knowledge was to be the foundation of much of the subsequent work in the Ministry of Health. The conclusion was that hospitals in a district should cease their petty rivalry and move to a functional union with a common staff. Collaboration not competition seemed to the surveyors, the basis for the future hospital services.<sup>85</sup> The survey recommended that, some of the local Nottingham hospitals, 'the Eye Hospital should be absorbed by the General Hospital. The Throat, Ear and Nose Hospital is grossly over-crowded. It is housed in buildings unsuitable for hospital use. Special departments for Eye and Ear, Nose and Throat should be provided by General Hospital Nottingham'.<sup>86</sup> A merger was agreed between the NNHDTEN

and the ENT Department of GHN in October 1947, with closure in early December, approved by the Ministry of Health and the Charity Commission.<sup>87–89</sup> Howitt requested<sup>89</sup> that ‘the history and records of the NNHDTEN be appropriately placed in the General Hospital’. A Memorial Plaque was commissioned and placed in the foyer of the ENT Department GHN to acknowledge the work of Dr Stewart and his contribution to Nottingham Ear, Nose and Throat Services, the records remain untraceable<sup>90</sup> (Figure 5).

### British ENT: the need for a national identity

It was the *Beveridge Report* in 1942 that concluded that a medical service without a charge at any point for any person was the right answer in a proposed NHS.<sup>91</sup> The doctors were suspicious of central control and the voluntary hospitals did not believe it would happen. In the years that followed, a series of government proposals for taking forward Beveridge’s ideas were challenged by the doctors.<sup>83</sup> This impending threat to otolaryngologists’ status quo led to the need for the establishment of an association, for the first time there was public agreement between otologists and laryngologists, and The British Association of Otorhinolaryngologists (BAOL) was founded in 1943, which primarily would provide an important political base.<sup>92</sup>

The White Paper in 1944 included measures for the abolition of health insurance and for the establishment of a system of government contracts of service with medical practitioners and hospitals. All of these plans and future plans opened the old social divide between the hospital consultants and the general practitioners. Discussions about working conditions and remuneration of doctors were initially by a large committee of ‘stake holders’ which included the BMA and the Royal Colleges. However, the BMA went independently for remuneration of the general practitioners and the Royal Colleges (Physicians and Surgeons of London), which included the presidents negotiated on behalf of hospital specialists and consultants. The Health Services Act consistently used the word ‘specialist’ rather than ‘consultant’ for hospital-based senior doctors.<sup>14</sup> The President of the College of Surgeons at this time was Sir Alfred Webb-Johnson (1880–1958) who led the contract negotiations of hospital surgeons with the Ministry of Health during the period 1941–1949. It was he who offered accommodation and secretarial assistance at the RCS to BAOL, as well as ensuring that any surgical specialty not represented by an elected member of the council should be co-opted as an ‘invited’ on the College council. Subsequently, BOAL gained representation on the council of the RCS and obtained support for the establishment of a separate final fellowship in otolaryngology from that of the general surgeons.<sup>92</sup>

### Commentary

Nottingham was granted city status in 1897 by Queen Victoria, having thrived industrially, both in the town and surrounding villages from the mid-nineteenth century. Nottingham’s population had undergone a rapid growth from 44 511 in 1801 to 239 743 by 1901.<sup>93</sup> The economy, industry and employment in the early twentieth century continued to rely on the traditional textile industries based in the city and the coal, iron and engineering which were mostly at a distance from the city centre, which by their heavy demands for labour contributed to local prosperity. But, change was imminent by the establishment of Boots (pharmaceuticals), Players (tobacco)



Fig. 5. Plaque recording that Dr Donald Stewart was the first specialist in throat and ear surgery, and founder of the Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose. (Source acknowledges Paul Swift.)

and Raleigh Cycle Co. which sustained the local economy through the early decades of the twentieth century.<sup>94</sup>

The Public Health Act of 1872 compelled the local boards of health to appoint medical officers of health (MOH), which they had not implemented by the previous act in 1848.<sup>95</sup> The first annual report in 1882 of the MOH for Nottingham, and subsequent reports highlighted the connection between poor housing, the spread of infectious diseases and the increasing local death rates. At that time, the hosiery industry was based in people’s homes, the housing was already overcrowded with poor sanitation; most of the housing was of poor structure, usually divided into separate living areas housing several families, with a pail closet system for the removal of excrement, etc. Such a housing environment was rife with high infant mortality, as well as infectious diseases such as typhoid (enteric) fever, tuberculosis, small pox, scarlet fever, whooping cough, measles – all of which were documented and widespread in Nottingham, until the 1920s.<sup>79,96</sup>

Dr D Stewart who had worked as a general practitioner had first-hand exposure to the needs of a service for diseases of the throat, ear and nose, which was not being obviously provided by either the hospital or the dispensary. He sought and gained approval for such a venture – sadly, he recognised early that in order to provide a surgical service, beds were necessary. The governors at the NNHDTEN were unable or reluctant to rent or invest in such an expansion, although the demand continued to increase annually. The clinicians appointed in the early period had minimal surgical expertise and relied on income as part-time general practitioners. The appointment of two ‘trained and accredited’ surgeons to the Nottingham Children’s Hospital and the GHN heralded the demise of the NNHDTEN, and to much surprise how such a service survived for so long! The money from the sale of the NNHDTEN was used to increase the bed capacity from 40 to 51, with improvements in the operating theatre capacity, anaesthetic rooms, upgrading of the out-patient department, and teaching facilities, as well as appointing a senior registrar, registrar and two senior house officers (non-consultant clinical staff).<sup>97,98</sup>

The alterations and improvements to the ENT Department were not completed until 1952 and it was remarked that ‘it was felt right that an up-to-date ENT theatre unit has been provided’.<sup>99</sup>

Both Bell Tawse and A Tweedy, while working at the hospital, as well as in private practice, had time to get involved in local, national and international societies. Locally, both surgeons were involved in local government with planning and delivery of healthcare, as well as being presidents of the Nottingham Medico Chirurgical Society. Both also achieved national positions as President status of the RSM Sections of Laryngology and Otology, London – considered a first for a provincial specialist!<sup>100</sup> Tweedy was a Founder Member and Treasurer of the Collegium Otorhinolaryngologica for 10 years. They both also achieved presidential status of the Specialist Sections of Laryngology and Otology of the Annual Meeting of the British Medical Association (BMA).<sup>31</sup>

The stimulus to the development in the specialty of ENT was the ‘technical discoveries’ coupled with an increasing awareness that this specialty need not be confined to wholesale removal of tonsils and adenoids, indifferent operations on the nose and sinuses or destructive procedures on the ear.<sup>101,102</sup>

Some of the reasons for the initial lack of significant progress related to the lack of what are now considered fundamental needs for any surgery, such as general anaesthesia, antiseptic techniques, blood banking and transfusion, antibiotics, surgical pathology and skilled nursing care.<sup>1,2</sup> The history of mastoidectomy and its treatment, chronic ear infection associated with the risk of intracranial extension, using the hammer and gouge remains not obsolete and is still taught and practised in third world countries, but it was not until the 1920s that the microscope was used in ear surgery.<sup>103,104</sup> Penicillin antibiotic was discovered in 1928 but it was seriously rationed and only available for approved cases<sup>105</sup> and the alternative was sulphonamide discovered before penicillin was commercially produced from 1938.<sup>98</sup> Harrison described the early years (undefined – but likely into the early to mid-twentieth century) of British ENT as largely the haven for the desperate surgeon who had either failed to achieve success in a more general field or who had drifted around in the surgical whirlpool before being stranded on the shore of this particular specialty.<sup>106</sup>

However, Nottingham was ‘fortunate’ to recruit two trained surgeons, who established a national reputation, acknowledged by their local peers, including general surgeons, by having a department of ENT recognised and the building of a ‘state of the art’ purpose built clinical and surgical area.<sup>107</sup> It was the need to establish the BAOL for ‘political need’ in 1947 that ensured the participation of the specialty in negotiations with the Ministry of Health, represented by the Royal Colleges, on future working conditions and remuneration. The creation of a separate FRCS in otolaryngology by the RCS conveyed academic approval on the specialty and ensured a future career pathway for the surgically minded to select this specialty of Ear, Nose and Throat, Head and Neck Surgery, by deliberate choice.

**Acknowledgements.** The author wishes to thank the many people and institutions who assisted over many years to get this project completed: Local Studies Library, Nottingham Central Library for use of Figure 1; Peter Hammond, a research assistant at Inspire Nottingham Archives, Nottingham County Council, for the inclusion of Figure 4 (CA/ED/1/5/62); The Manuscripts and Special Collections, University of Nottingham; Paul R Swift, Honorary Archivist to the Nottingham University Hospitals NHS Trust and Historian for providing Figures 2, 3 and 5; and my long-standing

colleague and friend Liam Flood for his suggestions and encouragement in completing this project.

**Conflict of interest.** None.

## References

- Weir N, Mudry A. *Otorhinolaryngology: An Illustrated History*, 2nd edn. Ashford: Headley Brothers, 2013.
- Stevenson RS, Guthrie D. *A History of Oto-Laryngology*. Edinburgh: Livingstone, 1949.
- Stone JL. Sir Charles balance: a pioneer British neurological surgeon, *Neurosurgery* 1999;**44**:610–12.
- Kerr AG. James Yearsley: reflections of an otologist. *J Laryngol Otol* 1991;**105**:249–51.
- Simpson JF. Joseph Toynbee – his contributions to otology. *Proceed Roy Soc Med* 1963;**56**: 97–104.
- Utley AR, McGurk M. Sir Henry Trentham Butlin: the father of British head and neck surgery. *Br J Oral Maxillofac Surg* 2000;**38**:114–20.
- Nelson WR. In search of the first head and neck surgeon. *Am J Surg* 1987;**154**:342–6.
- Shedd DP. Wilfred Trotter, head and neck surgeon and sociologist. *Head Neck* 1996;**18**:366–9.
- Kershaw R. British ear and throat clinics historically considered. *J Laryngol Otol* 1913;**8**: 421–7.
- Lee WE, Liguorish MA, Neil WF. Dr Edwyn Andrew’s contribution to the eye, ear and throat institution for Shropshire and Wales. *J Med Biogr* 1998;**6**:217–21.
- Sorsby A. Nineteenth century provincial eye hospital (with special reference to those no longer extant). *Br J Ophthalmol* 1946;**30**:501–46.
- Southam Heritage Collection: Henry Lilley Smith. In: [www.southamheritage.org/2018/04/04/henry-lilly-smith/](http://www.southamheritage.org/2018/04/04/henry-lilly-smith/) [Viewed 29.08.2020 PJB].
- Nigam A, Campbell JB, Brain DJ. The Birmingham and Midland ear, nose and throat hospital: an obituary. *J Laryngol Otol* 1989;**103**:815–18.
- Stevens R. *Medical Practice in Modern England: The Impact of Specialisation and State Medicine*, 2nd edn. London: Transaction Publishers, 2009.
- Weisz G. *Divide and Conquer: A Comparative History of Medical Specialisation*. Oxford: University Press, 2006.
- Cherry S. *The Modern Hospital in History, c.1720–1948*. Department of Economics and Related Studies, University of York. Refresh 26 (Spring 1998);1–8.
- Felisati D, Sperati G. *Italian ORL Society: Past and Present*. Genoa: Tipografia Mengotti Cario & c. snc, Italy, 2005.
- Harrison DFN. *Felix Semon (1849–1921) – A Victorian Laryngologist*. London: Royal Society of Medicine, 2000;25–7.
- Bevan PG. Generalism and specialisation in surgery. *Ann Roy Coll Surg Eng* 1981;**63**:383–5.
- Abel-Smith B. *The Hospitals 1800–1948: A Study in Social Administration in England and Wales*. London: Heinemann Educational Books, 1964.
- Hunting P. *The History of the Royal Society of Medicine*. London: The Royal Society of Medicine Press Ltd, 2002.
- Grant D. The oto-laryngological societies of Great Britain and Ireland. *J Laryngol Otol* 1913;**28**:416–20.
- Gould G. A history of the Royal National Throat, Nose and Ear Hospital 1874–1982. *J Laryngol Otol* 1998;**112**(supp 22):1–9
- McKenzie D. The clinics of Britain for diseases of the throat, nose and ear. *J Laryngol Otol* 1913;**3**:433–51.
- Jacob FH. *A History of the General Hospital Nottingham*. Bristol. John Wright & Sons, 1951
- Whitfield M. *The Dispensaries: Healthcare for the Poor before the NHS*. Bloomington, IN: AuthorHouse, 2016.
- Galloway NR. *The Nottingham Eye Hospital*. Published by N R Galloway, Printed by Technical Print Services, Nottingham, 2003.
- Crothall L. *A History of Nottingham Children’s Hospital 1869–1979*. Nottingham Special Trustees Children’s Hospital: Nottingham, 1978.
- Amos D. *Nottingham Hospitals: Women’s Hospital, Castlegate, Nottingham*. In: [www.nottsheritagegateway.org.uk](http://www.nottsheritagegateway.org.uk) [Viewed 28 Aug 2020 PJB].
- Founder of a Nottingham Hospital, *Nottingham Evening Post* (report), 28 February 1914;5.
- Swift PR. *From Sawbones to Keyholes: Presidents of the Nottingham Medico-Chirurgical Society from 1828–2002*. Hough on the Hill, Grantham, Lincolnshire: Barry Books, 2003.

- 32 Proposed Throat and Ear Hospital for Nottingham (public notice), *Nottingham Evening Post*, 21 July 1887;3.
- 33 Nottingham Throat, Ear and Nose Hospital (report), *Nottingham Evening Post*, 26 February 1890;3.
- 34 Throat and Ear Hospital, Nottingham (public notice), *Nottingham Evening Post*, 6 January 1891;3.
- 35 Nottingham Throat and Ear Hospital (report), *Nottingham Evening Post*, 24 February, 1891;3.
- 36 Nottingham and Notts. Throat and Ear Hospital (report), *Nottingham Evening Post*, 29 February 1896;3.
- 37 Nottingham and Notts Ear Hospital, Annual Meeting (report), *Nottingham Guardian*, 31 March 1900;8.
- 38 Nottingham Throat, Ear and Nose Hospital (report), *Nottingham Evening Post*, 30 March 1906;6.
- 39 Nottingham Throat, Nose and Ear Hospital – Extension Needed (report), *Nottingham Guardian*, 24 February 1927;6.
- 40 New Out-Patients Department Appreciated – Effort to Liquidate Debt (report), *Nottingham Evening Post*, 21 February 1929;7.
- 41 Still in Debt; Nottingham Throat and Ear Hospital's Need of Funds (report), *Nottingham Evening Post*, 28 February 1930;16.
- 42 *The Fifty-Second Annual Report of Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose*. Year ended 1938. Retained by the Nottingham Central Library.
- 43 Approval of Constitution; Nottm. Committee's Decision, *Nottingham Evening Post* (report), 22 May 1939;10.
- 44 *The Fifty-Fourth Annual Report of the Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose*. Year ended 1940. Retained by the Nottingham Central Library.
- 45 Presentation at Hospital: Nottingham Tribute to work of Mr. T. C. Howitt (report), *Nottingham Evening Post*, 22 June 1935;7.
- 46 Scoffham E, *A Vision of the City Architecture of TC Howitt*, (Nottingham, Nottingham City Council Leisure Services Department), 1992.
- 47 Throat, Nose and Ear Hospital: Sheriff on effect of white paper plan. *Nottingham Guardian* (report), 23 February 1945;8.
- 48 Nottingham Hospital plans move to Mapperley Road. *Nottingham Guardian* (report), 22 February 1946;7.
- 49 Ministry of Health. *A National Health Service*. London: His Majesty's Stationary Office, 1944.
- 50 Need for 'Special Hospitals': Lord Mayor and Coming Changes, *Nottingham Journal* (report), 22 February 1947;6.
- 51 *Annual Reports of The General Hospital Nottingham (1906–1910)* Bound Volumes (Uhg R9) Held at the Manuscripts & Special Collections, The University of Nottingham.
- 52 *Annual Reports of The General Hospital Nottingham (1916–1920)* Bound Volumes (Uhg R11) Held at the Manuscripts & Special Collections, The University of Nottingham.
- 53 Obituary. Alexander Robert Tweedie. *J Laryngol Otol* 1939;1:437–350.
- 54 Parr's Lives of the Fellows: Tawse, Herbert Bell. In: [www.rcseng.ac.uk](http://www.rcseng.ac.uk).
- 55 *Annual Reports of The General Hospital Nottingham (1921–1928)* Bound Volumes (Uhg R12) held at the Manuscripts & Special Collections, The University of Nottingham.
- 56 *Annual Reports of The General Hospital Nottingham (1934–1936)* Bound Volumes (Uhg R14 – R15) held at the Manuscripts & Special Collections, The University of Nottingham.
- 57 *Annual Reports of The General Hospital Nottingham (1937–1947)* Bound Volumes (Uhg R16 – R17) held at the Manuscripts & Special Collections, The University of Nottingham.
- 58 Nottingham General Hospital: Effort to Liquidate Debt on Pay Bed Wing. *Nottingham Evening Post* (report), 21 December 1939;7.
- 59 Pay Bed Wing Extension: Mr. J D Player's Generosity. *Nottingham Evening Post* (report), 18 January 1945;8.
- 60 Nottingham Children's Hospital: Generous offer by Mr. T J Birkin. *Nottingham Evening Post* (report), 18 October 1899;4.
- 61 Nottingham Children's Hospital: Mr. T J Birkin's Generous Offer. *Nottingham Evening Post* (report), 8 November 1899;3.
- 62 Nottingham Children's Hospital: Operating Theatre Installed. *Nottingham Evening Post* (report), 10 May 1916;2.
- 63 Nottingham Children's Hospital: Extensions Nearing Completion. *Nottingham Evening Post* (report), 16 April 1928;9.
- 64 *Seventh-Fourth (1943) Annual Report of the Nottingham Children's Hospital*. Retained at the Local Studies Library, Floor 1, Nottingham Central Library.
- 65 Nottingham Children's Hospital. *Nottingham Evening Post* (report), 2 August 1946;4.
- 66 *Seventh-Sixth (1945) Annual Report of the Nottingham Children's Hospital*. Retained at the Local Studies Library, Floor 1, Nottingham Central Library.
- 67 Rees R. *Poverty and Public Health 1815–1948*. Oxford: Heinemann Educational Publishers, 2001.
- 68 Nottingham Deaf Society. In: [www.nottsdeaf.org.uk](http://www.nottsdeaf.org.uk).
- 69 Nottingham Educational Committee: Opening of a Central School Clinic. *Nottingham Evening Post* (report). 16 May 1923;1.
- 70 *Medical Officers Annual Report upon School Medical Infections and Treatment, City of Nottingham Educational Committee. 1918–1947*. (Bound Volumes CA/ED/1/5/53–62, CA/ED/1/5/1–19). Retained at the Nottinghamshire Archives, Nottingham.
- 71 Chaucer Street Clinic: Nottm. Education Committee £5,000 Purchase. *Nottingham Evening Post* (report), December 1920;5.
- 72 Caring for Kiddies: Opening of Nottingham's New Clinic. *Nottingham Evening Post* (report), 8 November 1926;5.
- 73 Chaucer Street Clinic; Attendance at Clinic. *Nottingham Evening Post* (report), 17 July 1929;1.
- 74 Friel AR. Aural discharge in children. *Lancet* 1923;201(S192):457
- 75 Macfie J. Bagthorpe to the City: Story of a Nottingham Hospital. Published by Nottingham Health Authority, 1984.
- 76 Child's Fall Downstairs: Distressing Story at Mansfield Inquiry. *Nottingham Evening Post* (report), 16 June 1936;6.
- 77 Mansfield Hospital: 57 Firms Respond to appeal. *Nottingham Evening Post* (report), 28 January 1942;4.
- 78 Hospital Appointments. *Nottingham Evening Post* (public notice), 6 May 1947;1.
- 79 Cherry S. *Medical Services and the Hospitals in Britain 1860–1939*. Cambridge: Cambridge University Press, 1996.
- 80 Cherry S. Hospital Saturday, workplace collections and issues in late nineteenth-century hospital funding. *Med Hist* 2000;44:461–88.
- 81 Cherry S. Before the national health service: financing the voluntary hospitals, 1900–1939. *Econ Hist Rev L*, 1997;2:305–26.
- 82 Hayes N, Doyle BM. Eggs, rags and whist drives: popular munificence and the development of provincial medical voluntarism between the wars. *Hist Res* 2013;86:712–740. doi: 10.1111/1468-2281.12020.
- 83 Edwards B. *The National Health Service: A Manager's Tale*. London: Publisher Nuffield Provincial Hospitals Trust, 1933.
- 84 Powell M. Hospital provision before the National Health Service: a geographical study of the 1945 hospital surveys. *Soc Hist Med* 1992;5:483–504.
- 85 Godber G. The hospital survey, 1942–44. *The Lancet* 1998;352:49–51.
- 86 Ministry of Health, Hospital Survey. *The Hospital Services of Sheffield and East Midlands Area*. London: His Majesty's Stationary Office, 1945.
- 87 Bradley PJ. The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose (1886–1947): its formation, rise and demise. *J Laryngol Otol* 2020;134:566–70.
- 88 Speedier Treatment for Nottingham Patients. Throat, Ear and Nose Hospital Transfer. *Nottingham Journal* (report), 1947, 31 October;4.
- 89 Nottm. Hospital Merger *Nottingham Journal* (report), 26 November;1.
- 90 Concentration of a Valuable Service, *Nottingham Evening Post* (report), 30 October 1947;5.
- 91 Beveridge W. *Social Insurance and Allied Service* (Beveridge Report) (CMD 6404), HMSO, London, 1942.
- 92 Weir N. A celebration of 60 years: the British Association of Otorhinolaryngologists – Head and Neck Surgeons (BAO-HNS). Published BAHNO-HNS, Ashford, Kent: Headley Brothers Ltd, 2003.
- 93 Beckett J. An industrial town in the making, 1750–1830. In: Beckett J, ed. *A Centenary History of Nottingham*. Cambridge: Cambridge University Press, 2006;189–219.
- 94 Chapman SD. Economy, industry and employment. In: Beckett J, ed. *A Centenary History of Nottingham*. Cambridge: Cambridge University Press, 2006;480–512.
- 95 Amos D. Prevention is better than cure: the work of the early Nottingham Medical Officers of Health, 1873–1929. *Public Health* 2008;122:568–77.
- 96 Amos D. Public health: Overview. In: <http://www.nottsheritagegateway.org.uk/themes/health.htm>.
- 97 *First Annual Report of Nottingham No.1 Hospital Management Committee*. Presented at a Meeting held at The General Hospital Nottingham (year ending 1949), 24 May 1950. (Uhg/R77/1 Held at the Manuscripts & Special Collections, The University of Nottingham).
- 98 Neil JN. The growth of specialist services – doctor's memories. In: Bittern J, Lowe D, eds. *Nottingham General Hospital: Personal Reflections*. Pub. Special Trustees for Nottingham University Hospitals, Nottingham, 1990;62–3.

- 99 *Second Annual Report of Nottingham No. 1 Hospital Management Committee*. Presented at a Meeting held at the General Hospital Nottingham (year ending 1950), 30 May 1951. (Uhg/R78/2 Held at the Manuscripts & Special Collections, The University of Nottingham).
- 100 Bell Tawse H. *Nottingham Evening Post* (public notice), 6 October 1929;5.
- 101 Harrison DN. Has the speciality of ENT-head and neck surgery a future? *J Laryngol Otol* 1996;**110**:718–22.
- 102 Harrison DFN. A century of British otorhinolaryngology 1887–1987. *J Laryngol Otol* 2007;**121**:7–13.
- 103 Bento RF, de Oliveira Fonseca AC. A brief history of mastoidectomy. *Int Arch Otorhinolaryngol* 2013;**17**:168–78.
- 104 Mudry A. The history of the microscope for use in ear surgery. *Am J Otolaryngol* 2000;**21**:877–56.
- 105 Penicillin Used by Nottm. Hospitals. *Nottingham Journal* (report), 9 March 1945;3.
- 106 Harrison DFN. What's wrong with British ENT? *Clin Otolaryngol* 1976;**1**:67–70.
- 107 The New Wing. *Nottingham Evening Post* (report), 23 November 1927;1.

## Appendix 1

### Biography of Nottingham Ear Nose and Throat Surgeons

#### **Glass, Mr Edward James Gilroy (b1901–d1980) Surgeon**

Born: North Berwick, Scotland; Medical School: Edinburgh 1924; FRCS Ed 1928, DLO. 1930; H/S NGH 1925; Honorary Assistant ENT Surgeon to Mansfield General Hospital and Nottingham City Hospital, Honorary Clinical Assistant GHN 1929; Studied in Philadelphia, visited clinics in Paris, Vienna and Holland 1930s; Honorary Assistant Aural Surgeon NGH 1935; TA Medical Officer 1927–1938; promoted to Major and served in France, Holland and India 1937–1946, demobilised as Colonel, honoured TD with two bars; Hon. Aural Surgeon GHN 1946; Honorary Surgeon NNHDTEN 1937–1947; Retired 1966; Died: Guernsey 1980.

#### **Gray, Dr John Power (b1883–d1937) General Practitioner and Surgeon**

Born: Madras, India; Medical School: King's College, London; LSA London 1884 Member, 1884 Fellow; FRCS Eng 1889; H/S Halifax Infirmary 1886–1888, H/S GHN 1889–1894; Hon. Ass. Surgeon 1890–1895, Hon. Surgeon NNHDTEN 1895–1937; Died Nottingham 1937.

#### **Herrick, Dr Robert Warren (b1863–d1937) General Practitioner, Surgeon and Anaesthetist**

Born: Templemore, Cork, Ireland; Medical School; Trinity College, Dublin; BA 1886, MB 1887, B Ch 1888, MD 1890; Honorary Assistant Surgeon NNHDTEN 1890; Honorary Senior Surgeon NNHGTEN 1900–1923; Consultant Anaesthetist GHN 1920–1931; Died: Nottingham 1937.

#### **Lieberman, Mr Hyman Barnett (b1903–d1949) Surgeon**

Born: Stepney, London; Emigrated to Australia 1912; Medical School: Sydney; MB ChM, 1926; Returned to England – Nottingham 1928 – H/S GHN 1928; FRCS Ed 1932; Hon. Assistant Aural Surgeon GHN 1935–1947; Hon. Surgeon NNHDTEN 1937–1947; Hon. Aural Surgeon GHN 1947; Resigned 1947; returned to Australia; Died: London 1949.

#### **Kaplan, Dr Ernest (b1911–d1998) Surgical Registrar**

Born: London; Emigrated to South Africa as a teenager but returned to UK on several occasions 1930, 1931 and 1938; Medical School: Cape Town University, South Africa; Medical Register UK 1936; MRCS Eng, LRCP London 1936, DLO 1942; H/S Mansfield Hospital 1936; RMO GHN 1941; Surgical ENT Registrar GHN 1944–1963; Returned to South Africa; Emigrated to Dallas, USA; Died USA 1998.

#### **Macleod, Mr Ian Alistair Murdie (b1913–d1980) Surgeon**

Born: Edinburgh; Medical School: Edinburgh; MB, ChB 1937, FRCS Ed 1940; H/S ENT Royal Infirmary Edinburgh; RAMC 1941: deployed to Nigeria, India, Far East – demobilised Lieutenant-Colonel; Assistant Aural Surgeon GHN, Children's Hospital and Nottingham City Hospital 1947, Honorary Aural Surgeon GHN 1948; Researched with Jules Lempert, New York 1949; Retired 1977; Died: Nottingham 1980.

#### **Mansfield, Dr George Herbert Hind (b1877–d1955) General Practitioner and Surgeon**

Born: Ixeworth, Thorpe, Suffolk; Medical School; Guys 1895–1901; Lic.RCS London 1901, MRCS Eng 1901; RAMC service 1912–1919; awarded RAMS and MC; Period Ministry of Pensions, Nottingham; General Practice; Hon. Assistant Surgeon NNHDTEN 1926–1947; Died: Nottingham 1955.

#### **Marshall, Mr Archibald Robert Alex (b1906–d1963) Surgeon**

Born: Timaru Canterbury, New Zealand; Medical School; University of Otago at Dunedin; MB, ChB 1931; Emigrated to UK 1937; FRCS Ed 1937; H/S GHN 1937; Clinical Assistant to Bell Tawse GHN 1937–1939; Hon. Assistant Surgeon NNHDTEN 1938; Temporary Hon. Assistant Aural Surgeon GHN 1939, Hon. Assistant Surgeon GHN 1940, Honorary Surgeon Aural GHN 1947; Assistant ENT Surgeon Mansfield General Hospital 1942, Consultant Surgeon Mansfield General Hospital 1947; Hon. Assistant Surgeon Nottingham Children's Hospital 1940, Senior Honorary Surgeon Nottingham Children's Hospital 1947; Died: Nottingham 1963.

#### **Stewart, Dr Donald (b1843–d1914) General Practitioner and Surgeon**

Born: Glenbarr, Argyllshire, Scotland; Medical School: Glasgow University 1874; MB 1874, LRCS Ed 1874, MD Glasgow 1976; General Practice Assistant in Nottingham 1873–1874; House Surgeon ENT Blackburn 1874; Travelling Fellow ENT Edinburgh, and Vienna; General Practitioner Nottingham 1876 onwards; Founder: The Nottingham and Nottinghamshire Hospital for Diseases of the Throat, Ear and Nose (NNHDTEN) 1886–1900; Retired: ill-health in 1900; Died: Aylesbury 1914.

#### **Tawse, Mr Herbert Bell (b1878–d1940) Surgeon**

Born: Aberdeen, Scotland; Medical School: Aberdeen MB, Ch B. King's College, London 1900, MRCS 1904, FRCS 1904; H/S Throat Hospital, Golden Square; Clinical Assistant: Central London Throat Hospital; ENT at the London Hospital; 1907 Nottingham and joined with Dr John Mackie ENT/General Practice; Honorary Surgeon Nottingham Children's Hospital 1908; Senior Surgeon to the Children's Hospital Nottingham 1930; Assistant Aural Surgeon GHN 1914, Honorary Aural Surgeon GHN 1920; Nottingham Medico-Chirurgical Society – Secretary for many years and President 1925; British Medical Association Annual Meeting Nottingham 1926 Vice-President Section Laryngology and Otolaryngology & Aberdeen and President of ORL Section 1939; Member on the Board of Nottingham Education's Committee on the causes and prevention of enlarged tonsils and adenoids; President of the Section of Laryngology of the Royal Society of Medicine, London 1928/29. The Nottingham Children's Hospital named the ENT Ward as 'The Bell Tawse Ward', also the Children's ENT Ward at the Ropewalk Wing was named 'The Tawse Ward' in 1941; Died: Nottingham 1940.

#### **Tweedie, Mr Alexander Robert (b1871–d1936) Surgeon**

Born: Bickley, Kent; St Bart's Medical School mid-1880s, MRCS, LRCP 1900, FRCS 1901; Civilian surgeon in the South African War 1893–1897; Casualty Office Royal Free Hospital 1898; Travelled to Vienna ENT Fellowship 1902–1904; Clinical Assistant Golden Square 1906; Hon. Assistant Surgeon Nottingham Children's Hospital; Honorary Assistant Surgeon GHN 1911; RAMC – active service in Turkey and Egypt between 1914 and 1917; Honorary Aural Surgeon NGH 1929; Elected to Nottingham City Council serving on the Health, Asylum Visiting, and Mental Deficiency Committee 1920–1924 (Resigned); British Medical Association Annual Meeting Nottingham 1926, Vice-President of Laryngology and Otolaryngology; President of the Nottingham Medico-Chirurgical Society 1928; Supported the work of the Royal Midland Institution for the Blind; Chairman and Patron of the Nottingham and Notts. Institute for the Adult Deaf and Dumb 1912–1936; President of the Section of Otolaryngology of the Royal Society of Medicine 1930/31; Vice-President Section of Laryngology Royal Society of Medicine 1936; Founder treasurer of the Collegium Oto-rhino-laryngologicum 1926–1936. The Annual Board Meeting 1937 of GHN named the Adult Male ENT Ward the 'Tweedie Ward' in his honour; Died: Unexpectedly Nottingham 1936.

#### **Wesley, Dr Frank William (b1870–d1935) General Practitioner and Surgeon**

Born: London; University College London Medical School, B. Ch. 1892, MD 1893; General Practice Nottingham 1895; RAMC 1915–1919 demobilised Acting Major & OBE; Period Ministry of Pensions, Nottingham; Hon. Assistant Surgeon NNHDTEN 1924–1935; Died: Nottingham 1935.